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ABSTRACT

The movement of society into the Information Age raises a number of important issues in the field of library and information science, including the role of libraries and information in building a learning society and helping individuals to learn. The library/information community also needs to address the issue of the government's role in disseminating information and protecting individual and property rights, and the government's support for (or competition with) the private sector in the field of information. Other issues of concern are the role of information in the economy, the value of information, the protection of intellectual property rights, and the determination of what future information professionals will need to know if they are to be able to meet the changing needs of the emerging Information Society. Finally, the issues of lifelong learning as raised in recent reports in the nation's educational system need to be examined, and the role of libraries in developing information skills needed for lifelong learning needs to be addressed. (3 notes/references) (EW)

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Toni Carbo Bearman

Dr. Toni Carbo Bearman received her bachelor's degree from Brown University and the M.S. and Ph.D. degrees from the Drexel University College of Information Studies. Her many professional accomplishments include service in various positions with the Brown University Libraries, executive director of the National Federation of Abstracting and Indexing Services, and as senior consultant for strategic planning and new product development at the Institution of Electrical Engineers in London. Since November of 1980, she has been the executive director of the National Commission on Libraries and Information Science.

Dr. Bearman has been particularly active in professional societies, especially the American Society for Information Science. In 1983, she received the Watson Davis Award for Continuous Dedicated Service to this organization. She served on its Board of Directors from 1978 to 1981. She is also a Fellow of the American Association for the Advancement of Science and the Institute of Information Scientists. Some other organizations in which she has been active as a board member include the American Society of Indexers, the Association of Information and Dissemination Centers, the U. S. National Committee for the UNESCO General Information Program, and the Center for Literacy. In addition, Dr. Bearman has been active in international organizations, serving on numerous panels and planning seminars and programs.

Learning to Learn: The Role of Libraries and Information in Improving the Quality of Life*

Toni Carbo Bearman

It is a great honor and privilege to be here at the Crossroads of America this evening to present the Lazerow Memorial Lecture. I had the pleasure of knowing Sam Lazerow for several years, when I worked in Philadelphia. He was a leader in the information field and is missed very much. Herb White is a friend and colleague of long-standing, going back to our Philadelphia days. I will never forget back in 1973 when I was living in England, and Herb called up to say hello to my husband and me. I was working part time as a consultant and was astonished that the famous Herb White, partner-president of ASIS and SLA, would track me down and telephone. In my mind, that is a measure of a truly great and kind man.

As a federal employee, I would like to remind you that my remarks this evening are strictly my own personal views and do not necessarily represent those of the National Commission on Libraries and Information Science or of the U.S. Government.

I have selected as my topic, one that relates to a critical role for libraries and information — the role in building a learning society, in helping individuals learn to learn. Throughout 1984 we have heard repeatedly about our "nation at risk."[1] The National Commission on Excellence in Education presented a sobering statement to Americans, telling us that we have let our formal educational system deteriorate to a dangerous degree. We have seen a rising tide of mediocrity in our school systems. There are twenty-six million functionally illiterate adults in the United States and the number increases daily. There is a dearth of qualified mathematics and science teachers. The gloomy facts combine to form a picture of a nation at risk. We risk continuing to raise generations less well educated than their parents for the first time in American history, continuing to increase the number of functional illiterates, and continuing to fall behind in our technological

*Presented at Bloomington, Indiana November 27, 1984

competition with other nations. Paradoxically, this rising tide of mediocrity is taking place just as we are moving firmly into the Information Age. We are now a mere sixteen years from the twenty-first century and on the brink of the Information Age. The way information is permeating and transforming all aspects of society is better expressed in French as *l'informatisation de la société*. Increasingly, we recognize the value and importance of information in decision making, in productivity, and in improving the quality of life. The old cliché, "information is power," has taken on new meaning as we treat information products and services as valuable commodities to trade and protect, like gold or hog bellies. This fine library school is in one of our leading state universities. Graduate schools in the library/information field, and the universities of which they are a part, are undergoing major changes as they move into the Information Age. Similarly, the changes in libraries, in large part because of rapid technological developments in our field, have also been significant. But what does it mean to be in the Information Age?

The Information Age

The Information Age, or the Information Society as it is sometimes called, is a popularization to describe a society transformed by information technology and by an increased emphasis on the importance of knowing how to find and use information effectively. This transformation has brought problems as well as opportunities and its consequences are poorly understood. As a recent editorial notes:

> The label "Information Society" correctly encapsulates the concept of the vast flow and speed of information which inundates us all. But it fails to reflect the fact that our ability to store, manipulate, and transmit enormous quantities of information, of itself, does not improve our capacity to make good judgments or to act wisely. Moreover, civilization has always been dependent on the transfer of information from one person to another and from generation to generation. Only techniques for the transfer of information change because they are tools, means, but the process remains and is as necessary as life.[2]

How information is handled both depends on and determines the quality of decisions people make. We are moving rapidly into an Information Age. Just as we used our knowledge from the Industrial Age to bring about innovation to improve productivity in agriculture, we should apply our knowledge from the emerging Information Age

to improve productivity in industry, and, more importantly, to improve the quality of life around the world. In order to improve the quality of life, we must first improve our ability to learn to learn!

Before turning to this question concerning the ability to learn to learn, I would like to look briefly at a few important issues confronting us today and in the next decade.

Issues

The movement toward the Information Age raises a number of issues of importance to us in the library/information field. Among these are five issues I would like to discuss very briefly this evening:

1) the role of government
2) the role of information in the economy
3) the value of information
4) the protection of intellectual property rights
5) the education of future information professionals

The Role of Government

Questions continue to be raised by the commercial sector and representatives in government concerning whether information policies are needed to define the responsibility of government vis-à-vis that of the private sector in disseminating information. There is considerable disagreement over what the role of the government at all levels — federal, state, and local, national and international — should be in the dissemination of information concerning such areas as the protection of privacy and proprietary rights, with respect to the right of citizens to know what their government is doing; the protection of national security; questions of national sovereignty; and the government's support for (or competition with) the private sector. One group argues that many types of information must be protected to guard national security and to keep other nations that compete with U.S. industry from using technological information developed by the United States. A different contingent contends that the principle of the unrestricted flow of information must prevail to ensure that U.S. industry can compete, and it argues that those who want the information will be able to get it anyway.

Concerns are also raised about the government's competing unfairly with the private sector by providing products and services for prices far below what commercial companies must charge to recover their full costs and make a profit. On the other side, users of government information complain that, if the government shirks its re-

sponsibility to disseminate information that the taxpayers have already paid to produce and relies on the market to determine whether a product or service should be offered, many citizens will be unable to obtain information about products and services needed, either because the price would be too high or because the product would no longer even be offered (for there would not be enough of a profit to warrant a commercial company's offering it).

The library/information community needs to examine these complex issues to help determine what the role of the government should be. The government's roles in supporting research, gathering and disseminating information, and setting national policies and priorities should be discussed by our profession. We in the library/information community need to take a leading role in addressing these topics and in advising on the appropriate role of government.

The Role of Information in the Economy

The second issue is how to define the role of information in the economy, especially in determining industrial policies. As countries move from an economy based on industrial growth to one based on information and information technology, it is essential that the library/information community participate in the determination of how information can be harnessed to help in improving economic conditions and in developing industrial policies that minimize unemployment and maximize productivity. Information professionals have played important roles in the past in developing information resources to achieve such missions as improving our agricultural system, putting a man on the moon, and finding cures for disease. Expertise is needed now to establish policies to develop and exploit the valuable resources of information and information technology. As more of the gross national product is derived from information-related activities, careful planning for policies designed to continue to improve the economy worldwide must focus on information technology and information resources.

The Value of Information

As decision makers begin to understand the value of information for bringing about innovation and improving productivity, they also learn the importance of the ability to find and use information effectively. Information professionals are in a unique role to be able to communicate the value of information and the importance of information skills for all aspects of decision making, as well as for increas-

ing productivity and improving the quality of life. We are the best spokespersons to get this message across to decision makers in our universities, in government, and in industry.

Protection of Intellectual Property Rights

In light of the rapid technological developments taking place, it is becoming increasingly difficult, if not impossible, to protect intellectual property rights. Serious ethical questions have been raised in recent years concerning violation of copyright through photocopying of multiple copies of printed publications. Losses of revenues caused by photocopying of printed publications pale in comparison to potential losses from pirating of software or capturing the beaming of shows from pay television via satellites without compensating the owners. Several countries that do not honor copyright obtain copies of software packages and duplicate them in large numbers. Combinations of copyright law revisions, international agreements, lease and licensing arrangements, and encryption techniques are being used in attempts to protect intellectual property.

Many of the creators of this intellectual property are in the library/information community. The moral and ethical questions raised relative to the complex question of rights and responsibilities could benefit from discussion in our professional associations. Decision makers should consider the ethical and legal implications of this issue. Although it is discouraging to think that we must ask some of our best minds to turn their attention to developing methods to keep people from getting information, such efforts will be needed to ensure that the large economic and intellectual resources devoted to developing products and services are not lost. Questions of how the property can be protected, who should be responsible for protecting it, who will pay to be certain that protective procedures are developed, who owns the intellectual property, how to protect against censorship, what legislation will be needed, and what international pressures can be brought to bear to get all countries to respect intellectual property rights are a few of the important questions related to this issue that are worthy of exploration by the community.

Educating Future Information Professionals

The final issue relates to developing new coalitions to determine what future information professionals need to know and how our educational systems can get the resources needed to educate and train them. It is extremely difficult to determine what knowledge, skills,

and attitudes will be needed by future information professionals, yet our undergraduate and graduate programs are being called upon to develop curricula and work-study programs to provide them. The challenge today is similar to that of defining a computer science curriculum in 1955. New laboratory facilities, computer hardware, and funds for computer time for searching databases are needed. Resources are required to provide continuing training and educational programs for faculty teaching in information programs. The interdisciplinary nature of the information field demands close interaction between library/information schools and departments of computer science, management programs, communication schools, sociology departments, and other programs to provide the background and expertise needed. Large contributions from industry will be needed to endow chairs, provide faculty exchange programs, and fund student internships. The total needs for an emerging discipline are great and will require a combined and concerted effort.

Determining how to educate the future leaders in the information profession is very important in shaping the structure of our society as it moves into the Information Age. More than half the U.S. workforce is in information-related jobs. It is evident that the future information professionals will be major leaders in the information economy. Questions of what these professionals will need to know to lead us well in the decades ahead certainly demand the attention of the library and information community.

These broad issues — the appropriate role of government in providing information, the role of information in the economy, the value of information, the protection of intellectual property rights, and the education of future information professionals — should be on the agenda for discussion at every professional society conference. Answers to these questions cannot be left solely to government officials or to industry leaders; nor should they be decided by any single country. They are of international concern and importance and could change the future directions of the world economy and of international relations. The library/information community must bring its wisdom and its unique perspective to these difficult, but challenging, issues as we move into the Information Age. With these issues in mind as a framework, let us turn to the question of learning to learn.

Learning to Learn

Soon after *A Nation at Risk* was published, NCLIS unanimously issued a statement supporting the effort to increase the effectiveness of American education, but noted an important omission in the report.

We said:

> Although the report recognizes that effective participation in our "Learning Society" requires each person to be able to manage complex information in electronic and digital form, it makes no recommendations on the role of library and information resources in elementary and secondary schools. The report omits reference both to the importance of library and information resources to underpin all of learning *and* to the essential skills and proficiencies involved in finding and using information effectively. . . . [We] believe that each elementary and secondary school must have school library media services of strong quality. . . . These services should be integrated with the student's entire program of studies and should be connected with services outside of the school — such as those of public, academic, and research libraries.[3]

Our chairman met with Secretary Bell to transmit this statement and the commission disseminated it widely to the library and information community.

The commission continues to urge the provision of high quality library and information services by personnel who are well qualified in library and information science and who are able to teach information skills and manage library resources in their schools. With these services in place for all students, the objective of strengthening education can be met.

In July 1984, the American Library Association published *Realities: Educational Reform in a Learning Society*, which was its response to *A Nation at Risk*. Two of its four conclusions echoed the commission's concerns.

> Good schools require good school libraries. Library research and information skills should be taught as a new basic. School libraries should have sufficient funds to participate in library networks for the sharing of information resources. People in a learning society need libraries throughout their lives. Teachers should help their students become better library users. Every academic and school library should provide library use and study skills instruction as an integral part of their institution's curriculum.

During the spring of 1984, the United States Department of Education sponsored a series of seminars on "Libraries and the Learning Society." Members of the commission and I participated in these seminars.

The report, *Alliance for Excellence: Librarians Respond to A Nation at Risk,* which resulted from these seminars, emphasizes that libraries "must be accepted as an integral part of the overall education system [and] the librarian must be considered an educator as well as a librarian." Very simply, libraries play a critical role in supporting education. There is a need for students to learn how to find and apply information and to use information resources, such as libraries, effectively. A major recommendation calls for "the nation's school library media centers and public libraries [to] be assessed for their ability to respond to the urgent proposals for excellence in education and lifelong learning."

Yet again the commission's concerns about lifelong learning and finding and using information effectively were raised. Of course, these are not only concerns of our commission, but concerns of the nation as a whole.

An underlying theme of these reports is the same as that of *A Nation at Risk;* namely, the need for lifelong learning. We believe that libraries of all types play an absolutely essential role in that process. A new theme has emerged, however, that further defines this role: the need for teaching information-seeking and information-finding skills at all educational levels. In a society that daily becomes more information-oriented and more economically dependent on the effective use of knowledge, the ability to find and use information is a fundamental skill. The need to develop this skill, as a basic part of each person's education, is not yet widely recognized. It requires greater recognition if the United States is to prepare its citizens to function effectively in tomorrow's society and for the United States as a whole to compete effectively in the world economy. Already we see a sharp distinction between the "information-haves" and the "information have-nots."

The first major step in addressing this area is to identify as clearly as possible the issues, questions, and problems related to the development of skills in finding and using information. This assessment should identify the types of skills that need to be developed, current and potentially useful means to develop those skills in programs for children and adults, and the changes that may be necessary or desirable in our educational system and our library and information service institutions. A major objective of the National Commission on Libraries and Information Science during fiscal year 1985 is to prepare a concept paper that will help identify and promote the expansion of programs that teach information-finding and information-using skills to children and adults. This paper is expected to help focus attention on these important skills and how they can best be

taught by libraries and other educational institutions throughout the lifelong learning process. The skill we are describing is as fundamental as the ability to read or write.

A Nation at Risk places great importance on computer literacy. That is not enough. Knowing how to operate one information technology tool, although it is a very powerful one, is only one step in learning how to find and use information effectively. Having knowledge about how to use a computer is only a means to an end, and is like learning how telephone equipment operates instead of learning how to communicate. Our goal is not learning to use computers, it is learning to learn, that is, *reasoning*.

We in the library/information field have been concerned about *reasoning* skills for years. We have recognized them as skills needed to conduct research. We also see them as skills needed to process (analyze or otherwise assess) the mountains of information that modern computing and telecommunications technologies make available to us.

If we need a clarion to call our attention to a fundamental skill needed by all of us, I believe it has already sounded. For although I have focused on the need to develop reasoning skills within the school setting, we need to develop these skills throughout the lifelong learning process. A key player to aid in the development of these skills is the library.

Too often we take our libraries for granted. There are approximately 110,000 libraries of all types in this country. We think of them as places with the latest novels, magazines, and newspapers. School libraries provide enrichment materials for children, professional literature for teachers and administrators, and, most importantly, highly trained professionals to identify materials needed and to teach the critical information skills.

One school library I visited recently was in a very poor inner-city neighborhood in Los Angeles. I saw the difference one librarian can make in the lives of hundreds of children. Many of the children who come into that school speak no English, are unable to read or write, and have parents who cannot read or write. First grade children are taught how to find books; they listen to stories and participate in discussions in Spanish with their librarian. By fourth grade they read, in part because of the close cooperation between the librarians and the teachers; they know how to look up books in the card catalog and find them, and how to use indexes to find answers to questions. The fourth grade class I visited was discussing fairy tales written in different countries and why the themes were the same around the world. That library and its librarian really made a difference. Those children were on their way to a life of learning.

The community-based public library is an American institution fundamental to our democratic society. We have countless examples of poor immigrants, including Andrew Carnegie, who were able to become educated through the use of the public library. Through a nationwide series of networks, many school, public, special, and academic libraries are now linked, providing access to a wealth of international resources for our continuing education. Library resources are critical to supporting curricula, research, and literary efforts. Without them, our educational system would be much poorer and, in fact, could not continue to exist, much less strive for excellence. To paraphrase the words from Patrick Dennis's wonderful *Auntie Mame*, libraries open doors for us, doors we never dreamed existed. Libraries make a difference in people's lives. I contend that without libraries we can not have a true learning society.

In addition to providing a vast array of resources and professionals with the expertise to teach critical information skills, libraries serve as important cultural institutions. They preserve the culture of our society and they serve as a focal point for the community. Libraries are available to people of all ages and from all economic and cultural backgrounds. They are the people's universities, providing resources needed for continuing education. Very importantly, libraries provide a means for communication among generations. Senior citizens participate as volunteers in adult literacy programs and in children's story hours, as friends of libraries, as members of trustee groups, and in many other important roles supporting library programs. The intergenerational communication that takes place in libraries contributes strongly to building a learning society.

We in the library/information field consider ourselves a critical part of the education and learning environment, and we play a central role in lifelong learning. We have long been concerned about developing reasoning skills and providing library and information resources for students of all ages, from all generations. We feel that we have become experts in developing networks of various types of libraries for the purpose of sharing information resources. We need to form new partnerships across disciplines, across generations, across our nation, and across national borders. Gaining recognition for libraries as full participants in the learning society is an important challenge. All the building blocks — educational institutions, the family, the private sector, community institutions, *and* libraries — must join together in strong partnership so that we will no longer be a nation at risk. Together we have the resources, the skills, and the spirit to become a nation of learners, a true learning society.

Notes

1. United States Department of Education, *A Nation at Risk: The Imperative for Educational Reform*. A Report to the Nation and the Secretary of Education by the National Commission on Excellence in Education, April 1983.

2. R. L. Stanfield and Gordon Robertson, "Popularization and Public Policy," *Annual Report of the Institute for Research on Public Policy, Canada, 1982*. Ottawa, Canada, The Institute for Research on Public Policy, 1982.

3. United States Domestic Council Committee on the Right of Privacy, *National Information Policy*. Washington, D.C., National Commission on Libraries and Information Science, 1976, 5-6.

Samuel Lazerow

Samuel Lazerow, in whose honor and memory these lecture series have been established, had a record of long and distinguished service in the library profession. An honors graduate of Johns Hopkins University who received his library graduate education at Columbia, he then returned to his home city of Baltimore to work at the Enoch Pratt Free Library. During World War II he served as the Army's chief library officer in Europe. Starting in 1947, Mr. Lazerow then spent 25 years of service in the federal library community, and held administrative posts at each of the three national libraries. From 1947 to 1952 he served as chief of acquisitions at the National Library of Agriculture, and followed that with a similar assignment at the National Library of Medicine from 1952 to 1965. In that year he joined the Library of Congress, where he headed a task force on the automation and sharing of services between the national libraries.

He joined the Institute for Scientific Information after his retirement from government service, and held the post of vice president for administration from 1972 until his death. This series of lectures was initiated by Dr. Eugene Garfield, founder and president of ISI, as a tribute to his friend and colleague. The Indiana University School of Library and Information Science is proud to have been selected as one of four schools to participate in the recognition of this library leader.